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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,458	08/16/2001	Nicholas Paul Cowley	042390.P23768	2970

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EXAMINER	
SHELEHEDA, JAMES R	
ART UNIT	PAPER NUMBER
2623	
MAIL DATE	DELIVERY MODE
11/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/931,458	COWLEY ET AL.	
	Examiner	Art Unit	
	James Sheleheda	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/14/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/14/07 has been entered.

Claim Objections

2. Claim 13 is objected to because of the following informalities:

In claim 13, line 4, "amplitude" should be changed to --amplitude samples--.

In claim 5, the claim status is indicated as "previously presented", however, the claim is indicated as being amended through the deletion of the limitation [intermediate signal].

Appropriate correction is required.

Response to Arguments

3. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 12, 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed fails to disclose "setting to zero only said amplitude samples with an amplitude greater than said threshold" as recited in claims 1, 12, 13 and 14. Applicant's invention describes setting to zero the sample which exceeds the threshold and ***also*** setting one or more samples before and/or after this value to zero (page 6, line 24-page 7, line 5). There is no specific disclosure of setting ***only*** the sample exceeding the threshold to zero.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, dependent upon claim 1, recites wherein "said corrector is arranged to set to zero n consecutive ones of said amplitude samples after each of said amplitude samples whose amplitude is greater than said threshold, where n is a positive integer." It is unclear as to how the corrector can *both* set ***only*** said amplitude samples exceeding the threshold to zero *and* set to zero n consecutive samples ***after*** the sample exceeding the threshold.

Claim 3, dependent upon claim 1, recites wherein "said corrector is arranged to set to zero n consecutive ones of said amplitude samples before each of said amplitude samples whose amplitude is greater than said threshold, where n is a positive integer." It is unclear as to how the corrector can *both* set ***only*** said amplitude samples exceeding the threshold to zero *and* set to zero n consecutive samples ***before*** the sample exceeding the threshold.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4-7, 9 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuji et al. (Tsuji) (EP 0930719 A2) (of record).

As to claim 1, Tsuji discloses a tuner comprising:

an input section for converting a radio frequency signal to a sequence in time of amplitude samples (paragraph 22);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of said amplitude samples (paragraphs 25-27 and 38-39);

a comparator for comparing said amplitude of each of said amplitude samples with said threshold (paragraphs 25-27 and 38-39); and

a corrector responsive to said comparator for setting to zero only said amplitude samples with an amplitude greater than said threshold (paragraph 61) and to transmit a signal to said threshold generator indicating that said threshold generator is to exclude from said average any of said samples whose amplitude exceeds said threshold (paragraphs 38-39).

As to claim 4, Tsuji discloses wherein said average is a moving average (sliding sampling window; paragraph 26).

As to claim 5, Tsuji discloses wherein said threshold is greater than a product of said average and a peak-to-average ratio of said amplitude samples (paragraph 26, 27 and 30).

As to claim 6, Tsuji discloses wherein said threshold is greater than three times said average (paragraph 27).

As to claim 7, Tsuji discloses wherein the input section comprises a zero intermediate frequency converter (paragraph 3 and 61).

As to claim 9, Tsuji discloses wherein the input section comprises an analogue/digital converter for forming the amplitude samples as digital samples (paragraph 22).

As to claim 12, Tsuji discloses a set top box comprising:

a tuner comprising:

an input section for converting a radio frequency signal to a sequence in time of amplitude samples (paragraph 22);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of said amplitude samples (paragraphs 25-27 and 38-39);

a comparator for comparing said amplitude of each of said amplitude samples with said threshold (paragraphs 25-27 and 38-39); and

a corrector responsive to said comparator for setting to zero only said amplitude samples with an amplitude greater than said threshold (paragraph 61) and to transmit a signal to said threshold generator indicating that said threshold generator is to exclude from said average any of said samples whose amplitude exceeds said threshold (paragraphs 38-39).

As to claim 13, Tsuji discloses a television receiver comprising:

an input section for converting a radio frequency signal to a sequence in time of amplitude (paragraph 22);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of said amplitude samples (paragraphs 25-27 and 38-39);

a comparator for comparing said amplitude of each of said amplitude samples with said threshold (paragraphs 25-27 and 38-39); and

a corrector responsive to said comparator for setting to zero only said amplitude samples with an amplitude greater than said threshold (paragraph 61) and to transmit a signal to said threshold generator indicating that said threshold generator is to exclude from said average any of said samples whose amplitude exceeds said threshold (paragraphs 38-39).

As to claim 14, Tsuji discloses a television signal recorder comprising:

a tuner comprising:

an input section for converting a radio frequency signal to a sequence in time of amplitude samples (paragraph 22);

a threshold generator for generating a threshold as a first function of an average of amplitudes of a plurality of said amplitude samples (paragraphs 25-27 and 38-39);

a comparator for comparing said amplitude of each of said amplitude samples with said threshold (paragraphs 25-27 and 38-39); and

a corrector responsive to said comparator for setting to zero only said amplitude samples with an amplitude greater than said threshold (paragraph 61) and to transmit a

signal to said threshold generator indicating that said threshold generator is to exclude from said average any of said samples whose amplitude exceeds said threshold (paragraphs 38-39).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji in view of Pulley et al. (Pulley) (6,754,292) (of record).

As to claim 8, while Tsuji discloses communication in any communication systems with strong interfering signal (paragraph 7 and 65), he fails to specifically disclose wherein the input section has in-phase and quadrature outputs for supplying the amplitude samples.

In an analogous art Pulley discloses a digital receiver/tuner with ADC that produces in-phase (I) and quadrature (Q) samples for decoding a signal (col. 2, lines 1-13).

It would have been obvious to one of ordinary skilled in the art at the time of the applicant's invention to modify the system of Tsuji to include wherein the input section has in-phase and quadrature outputs for supplying the amplitude samples, as taught by Pulley, for the advantage of providing better quality of service to customers with

equipment for decoding and processing signals (col.2, lines 1-6) and furthermore it would have been well known to one skilled in the art that commercial quadrature signal processing components (e.g. hardware/software) are readily available.

As to claim 10, while Tsuji discloses communication in any communication systems with strong interfering signal (paragraph 7 and 65), he fails to specifically disclose a COFDM demodulator.

In an analogous art Pulley discloses a digital TV receiver/tuner receives signals which utilize the COFDM modulating technique (col. 2, lines 1-13).

It would have been obvious to one skilled in the art at the time the invention was made to modify the system of Tsuji to include a COFDM demodulator as taught by Pulley for the advantage of providing better quality of service to customers with equipment for receiving and decoding signals (col.2, lines 1-6) and furthermore it is well known that signals transmitted using the COFDM technique resist different types of distortion/interference (e.g., multipath, burst noise, etc.) well.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji in view of Rakib et al. (Rakib) (6,426,983) (of record).

As to claim 11, while Tsuji discloses processing amplitude samples (paragraphs 23-27 and 38-39), he fails to specifically disclose a fast Fourier Transform.

In an analogous art, Rakib discloses a fast Fourier transformer for processing the amplitude samples from the corrector (Rakib - col. 9, 38-43; in which Rakib discloses

use of the FFT for a simpler detection/cancellation algorithm and reduced performance requirements of the processor).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Tsuji's system to include a fast Fourier Transform, as taught by Rakib, for the typical benefit of a simpler detection/cancellation algorithm and reduced performance requirements of the processor.

Conclusion

12. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sheleheda whose telephone number is (571) 272-7357. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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